Maine Department of Health and Human Services
Bureau of Health
Division of Disease Control

Maine Epi-Gram

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The purpose of the Epi-Gram is to distribute timely and science-based information to guide Maine's healthcare professionals in issues of public health and infectious disease importance and to promote statewide infectious disease surveillance.

New Rapid Tests for HIV Antibody Offer Choice and Accuracy

Use of a rapid test that provides same-day results can substantially increase the number of people who receive their test results, which improves the delivery of counseling and treatment services. Pilot programs in Maine have shown that rapid testing increases the volume of at-risk individuals seeking testing, in part because of the availability of same day results. Standard HIV testing methods may take up to two weeks for a result to be ready.

To date, the Food and Drug Administration (FDA) has approved three rapid HIV antibody tests for use by trained personnel as a point-of-care test to aid in the diagnosis of infection with human immunodeficiency virus (HIV). OraQuick Advantage, the latest to be approved, is a simple, rapid test that can detect antibodies to HIV 1 and 2 in fingerstick whole blood, oral fluid or plasma specimens. It provides results in less than 20 minutes. Under the Clinical Laboratory Improvement Amendments of 1988 (CLIA), the test has been categorized as “waived” for whole blood or oral specimens, allowing these tests to be run outside the typical laboratory setting. The test is categorized as moderate complexity for plasma specimens, primarily because of the need for a centrifuge. Another FDA-approved moderate-complexity rapid HIV test, Reveal G2, is available for use with serum or plasma specimens. A third rapid test that received FDA approval in 2004 is the Unigold Recombigen. This test is CLIA waived for whole blood specimens and rated moderate complexity for serum and plasma specimens.

On the basis of data submitted by the manufacturers for test approval, the sensitivity and specificity of the three rapid tests in clinical studies performed was shown to

be comparable to those of FDA-approved enzyme immunoassays (EIAs) in widespread use. Sensitivity is the probability that the test result will be reactive if the specimen is a true positive. Specificity is the probability that the test result will be non-reactive if the specimen is a true negative.

The negative predictive value (the probability that the test accurately predicts the true infection status of the person tested—in this case, negative) of screening with a single rapid test is high. Therefore, in areas like Maine, where HIV prevalence is low, a negative rapid HIV test does not require further testing, and negative results with counseling can be provided at the initial visit. Retesting is recommended for those persons with a recent (within 3 months) history of known or possible exposure to HIV because there might have been insufficient time for detectable antibodies to develop. As with any HIV screening test, all reactive (preliminary positive) rapid test results should be confirmed by supplemental testing by either a Western blot or immunofluorescence assay. The confirmatory tests can be performed on serum specimens obtained by phlebotomy, dried blot spots obtained on filter paper, or oral fluid specimens collected with the OraSure collection device.

Persons whose rapid-test results are reactive should be counseled about their likelihood of being infected with HIV and precautions to prevent HIV transmission, but they should return for definitive test results before medical referrals or partner counseling is initiated. A simple message to convey this information could be a statement that "Your preliminary test result was positive, but we won't know for sure if you are HIV-infected until we get the results from your confirmatory test. In the meantime, you should take precautions to avoid possibly transmitting the virus."

The Public Health Service recommends that rapid HIV tests should be used and preliminary positive test results provided when tested persons might benefit. Decisions about whether to use rapid tests should be based on considerations of return rates for standard test results and urgency of the need for test results (i.e., when necessary to make decisions about post exposure or perinatal prophylaxis). The use of rapid tests may facilitate the acceptance of HIV testing and improve receipt of results in health-care settings in which HIV testing is recommended, such as hospitals and acute care clinics, where persons who are unaware of their HIV status might seek health-care services.

In Maine, where return rates for standard HIV tests remain high (93-95%) and overall prevalence of HIV is low, the best use of rapid test technology is unclear. Rapid testing holds promise because it is appealing to members of high-risk populations wanting to avoid the anxiety of the standard wait for a result. Likewise, health care providers may prefer that results of the rapid test and any necessary referrals will be provided to patients during a single visit. Maine health care providers are encouraged to consider the possible benefits of rapid testing in their practice.

Additional information and guidance on the use of rapid HIV tests are available from CDC at http://www.cdc.gov/hiv/rapid_testing. Sites wanting to perform rapid testing that are not already certified to perform moderate-complexity laboratory tests under CLIA must enroll in the CLIA program, administered by the Centers for Medicare and Medicaid Services. The application and state agency contact information are available at http://www.cms.hhs.gov/clia/. Information about enrollment and the requirements for moderate complexity testing are available at http://www.phppo.cdc.gov/clia/default.aspx. CLIA moderate-complexity requirements provide minimum standards for personnel, quality control, proficiency testing, and quality assurance.

Contributed by: Charles Dwyer

Community-acquired *MRSA*: 10 Questions and Answers for Maine Health Professionals

1. What is *CA-MRSA* Infection?

Methicillin-resistant *Staphylococcus aureus (MRSA*) infection is defined as *S. aureus* infection that is resistant to commonly-prescribed beta-lactam antibiotics, such as cephalosporins. Healthcare-associated *MRSA (HA-MRSA)* infections have been a well-documented and increasing problem among patients in hospitals and LTCF's since the 1980's. As many as 50% of all *S. aureus* infections in some hospitals now prove to be *MRSA* strains.

Community-acquired MRSA (*CA-MRSA*) infection is defined as: ***a positive culture for MRSA from a specimen obtained from an outpatient (or from an inpatient < after 48 hours of admission to a hospital) with no history of prior MRSA infection or colonization, no history in the past year of surgery, dialysis or of admission to a hospital or skilled care facility, and no presence of indwelling percutaneous devices or catheters at the time of culture.***

2. Is *CA-MRSA* a Major Public Health Problem?

CA-MRSA cases and outbreaks are being recognized with increasing frequency around the country, but the magnitude of the problem is not entirely clear. Until recently, cases of community-associated MRSA were relatively rare. Since 2001, however, outbreaks of MRSA skin infections have been reported among athletes in contact sports, jail inmates, sauna and steambath users, injection drug users, men who have sex with men, and in other community settings. Of special concern is the fact that a disproportionately high number of persons diagnosed with *CA-MRSA* skin infections appear to have more severe complications than persons with methicillin-sensitive *S. aureus* (MSSA) infections, requiring parenteral antibiotic treatment, surgical drainage and/or hospitalization. Fatal cases of sepsis and pneumonia caused by *CA-MRSA* have been reported.

3. How is *CA-MRSA* infection transmitted?

CA-MRSA is believed to be transmitted in the same ways as is "garden variety" *S. aureus* infection, that is, primarily through direct skin contact with another person who is infected. Environmental surfaces contaminated with MRSA that then come into contact with bare skin will also transmit infection. In addition, *HA-MRSA* has been well-documented to be transmitted on the hands of health workers.

4. What are the clinical manifestations of cutaneous *CA-MRSA*?

CA-MRSA skin infections present in the same variety of forms as conventional *S. aureus* infections: wound infection, cellulitis, abscess, impetigo and similar papulopustular eruptions, folliculitis, and furunculosis. It is important to note, however, that many strains of *CA-MRSA* may carry a gene that induces the production of a potent toxin (Panton Valentine Leukocidin or PVL virulence factor), resulting in significantly more aggressive infections. Other than this propensity for greater severity, physical examination is unlikely to reveal specific findings that are helpful in distinguishing *CA-MRSA* from ordinary staph infections.

5. What does 'methicillin-resistant" really mean and why do we use this term?

As noted above, *MRSA* is defined by resistance to beta-lactam antibiotics (such as the cephalosporins and amoxicillin-clavulanic acid Augmentin), the drugs usually used to treat staphylococcal skin infections. Methicillin is a beta lactam drug that is no longer commercially-available, but was commonly used to treat *S. aureus* infections in the 1960's when susceptibility testing was first widely employed. For many years, the drug oxacillin has been used to test resistance to beta lactams, but the acronym "methicillin-resistant" has persisted. For practical purposes, we apply the label of *MRSA* to staphylococcal isolates that have reduced susceptibility to oxacillin in sensitivity tests, and this means that the infection will not respond adequately to the drugs usually used in treatment.

6. Can antibiogram patterns help differentiate *CA-MRSA* cases from those cases seen with Healthcare-Associated MRSA (*HA-MRSA*)?

Most isolates of *HA-MRSA* demonstrate resistance to penicillin (as do >95% of ALL *S. aureus*) and oxacillin, and are also resistant to erythromycin and clindamycin. *CA-MRSA* isolates are also resistant to penicillin and oxacillin, but unlike *HA-MRSA*, are likely to be susceptible to erythromycin, clindamycin, quinolones, trimethroprim-sulfa, and the tetracyclines. These features can be suggestive in classification but they are variable and should not be considered to definitive.

7. How should *CA-MRSA* infections be treated?

Consultation with an infectious disease specialist is always indicated in decision-making for treatment of *CA-MRSA* infections. For infections that are appropriate for outpatient treatment, doxycycline or a combination of trimethoprim-sulfa and rifampin is often employed. Rifampin should not be used alone, because of emerging resistance problems. The use of clindamycin may be problematic if the antibiogram indicates erythromycin resistance, because inducible clindamycin resistance can occur in this setting. Obviously, inpatient treatment demands parenteral antibiotic use in consulation with a specialist. As for any other infection, the essential treatment for abscesses remains early incision and drainage.

8. When should I suspect *CA-MRSA* infection?

Most community-acquired staphylococcal skin infections are **not** *MRSA* and do not demand any different evaluation or treatment approaches than those traditionally-used in primary care. However, clinicians should consider possible *CA-MRSA* in the following settings:

- ➔ When a staphylococcal infection does not respond rapidly to usually effective medications

such as cephalexin or Augmentin.

- When a staph-like lesion is seen in a close-contact athlete, a prisoner, or in any person who resides in a congregate setting.
- In the setting of any apparent outbreak of rash illness.
- When a staph-like skin infection is especially severe.

In such situations, a culture and sensitivity study should always be obtained. In **any** outbreak of skin infections - whether known to be *MRSA* or not- seen in football players, wrestlers, or other close contact athletes, please also call the 24-hour disease control reporting line at 1-800-821-5821.

9. How can *CA-MRSA* infections be prevented?

Handwashing with soap and water or with waterless hand sanitizers is essential in households or institutions in which *MRSA* has been identified. Wounds should be covered, and any individual with a draining lesion, whether covered or not, must be deferred from close contact activities or the use of shared athletic equipment. Appropriate disinfectants should be used frequently for all athletic equipment (including mats, blocking pads, etc…), and towels, protective gear, and clothing should never be shared. For athletes, showering with soap and water after every contact practice or game is critical. For athletes with intense close contact, such as wrestlers and football players, pregame and prepractice skin checks by a coach or trainer are important. The utility of preventive strategies such as nasal culturing of possible carriers, of nasal decontamination of carriers using mupirocin and of specific skin cleaners such as Hibliclens is being studied at this time.

10. What is Happening with *CA-MRSA* in Maine?

Several outbreaks of *CA-MRSA* have been documented in Maine during 2003-2004. Outbreaks at two county jails during the past winter resulted in 6 cases of severe skin infection, several requiring hospitalization, parenteral antibiotics, and/or surgical drainage. At one county jail, a prisoner died as a result of *CA-MRSA* pneumonia during an outbreak of influenza-like illness. Several family clusters of skin infection have also been reported this year. The frequency of the incidence of sporadic *CA-MRSA* cases is unclear.

The BOH is working with a multidisciplinary subcommittee of the Maine Infectious Disease Working Group to develop further recommendations for health and management of *CA-MRSA* infections.

Contributed by: Geoff Beckett

Influenza Surveillance Activities in Maine, 2004-2005

The 2004-2005 Maine influenza surveillance system has been established to track moderate, severe, and fatal disease, and is currently tracking both influenza and influenza-like illness across the state. As of November 18, there have been no laboratory confirmed reports of influenza in Maine. The Maine Weekly Influenza Surveillance Report is available on line at http://www.maine.gov/dhhs/boh/influenza/Influenza_home.htm. The purpose of the weekly update is to provide up-to-date information on the incidence of influenza and influenza-like illness in Maine. We are especially grateful to those individuals who are contributing to this surveillance system: sentinel physicians, school nurses, laboratorians, staff of the regional resource centers, and vital registrars.

Health care providers interested in additional information on influenza, specifically vaccine supply, vaccination guidelines, laboratory testing, anti-viral medications, and infection control measures, should refer to Maine Health Advisories on Influenza available at www.mainepublichealth.gov.

Contributed by: Kathleen Gensheimer

Maine Hepatitis C Testing Program Data Summary: May 1, 2002 – October 13, 2004

Background

Since May 1, 2002, the Maine Department of Health and Human Services, Bureau of Health has worked closely with partners from 11 of 16 counties in Maine to provide free hepatitis C EIA* antibody testing to persons at high risk for hepatitis C infection. Partners include STD clinics, family planning clinics, a methadone maintenance clinic, Indian Health Centers, Rural Health Centers, and AIDS service organizations. Each testing site receives the equivalent of a daylong training prior to initiating the project. Testing sites provide in-kind staff time for testing and counseling services. The Bureau of Health provides the test kit,

receive free testing, clients must meet at least one of the following criteria:

- Have a history of injection drug use (ever)
- Have a history of having a transfusion or transplant prior to 1992
- Have a history of hemophilia (or receiving factor concentrates made prior to 1987)
- Have a history of having a past or present hepatitis C positive sexual partner
- Have a history of occupational blood exposure
- Have a history of ever being on chronic hemodialysis
- Have a history of persistently abnormal alanine aminotransferase levels (ALT)
- Have a history of being born to hepatitis C positive mother

- **Have a history of receiving a tattoo in an unsanitary/unlicensed setting
- **Have a history of receiving body piercing in unsanitary/unlicensed setting

**Note: risk not definitively linked to hepatitis C.

As part of the testing protocol, clients (testing positive and negative) are referred for hepatitis A and B vaccination based on a risk assessment. Those meeting the risk criteria are eligible to receive free vaccine at one of the six state-funded vaccine sites. Clients testing anti-HCV positive are referred to primary care resources (if they do not already have them) and relevant support services such as needle-exchange, homeless shelters, mental health counseling, etc.

Data

The Centers for Disease Control and Prevention estimates a 1.8 % prevalence of HCV infection for the general public. Studies have shown that within 5 years after initiating injection drug use, 60-90% of injection drug users will have hepatitis C infection.

The overall prevalence of positive tests conducted on at-risk individuals through the Maine HCV testing program is 18%. Among persons reporting a history of ever injecting drugs, the program prevalence is 30%. These rates suggest that persons who chose to be tested through the program are indeed at relatively high risk for HCV infection.

The gender breakdown among anti-HCV reactive clients (2/3 male, 1/3 female) is consistent with the breakdown for cases reported through surveillance.

Persons seen in STD clinics (sites where the bulk of tests are conducted) are typically in their twenties and thirties.

*RIBA tests were provided free of charge to clients whose EIA antibody test results fell below a signal to cutoff ratio of 3.8. Because a ratio of less than 3.8 is not conclusive, supplemental testing was offered. For guidelines for Laboratory Testing and Result Reporting of Antibody to Hepatitis C Virus at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5203a1.htm

As such, 71% of those tested through the program were between 20 and 39 years of age. Of those found to be anti-HCV reactive, 65% were between 20 and 39 years of age.

Prevalence of anti-HCV positivity by age group is listed below:

18-19 years	**8%**
20-29 years	**14%**
30-39 years	**20%**
40-49 years	**26%**
50-59 years	**21%**
60-69 years	**20%**

(Under 18 and 70-79 was 1% or less)

The greatest numbers of tests were conducted at STD clinics, and seventy percent of the anti-HCV positive results came from persons tested at these clinics. Twenty-two percent of positive results were seen among clients at a methadone maintenance clinic.

Although most persons tested and most of those found to be anti-HCV reactive were white and non-Hispanic, persons from other racial/ethnic populations also tested positive.

Rates were highest in testing sites located in the metropolitan Portland area.

One hundred and thirty-three persons (92 %) of the 144 anti-HCV reactive reported a history of ever injecting drugs. Eleven persons (7.6%) reported other risks.

Observations and Recommendations

1. There is very strong evidence of the connection between a history of injection drug use and HCV infection in Maine.
2. Four persons who initially tested hepatitis C

receiving a second or third test. Each of these clients had a history of injection drug use. This underscores the need for increased attention to screening persons with a history of injection drug use and counseling anti-HCV negative patients with a history of injection drug use about what they can do to prevent HCV infection. In addition, as needed, referrals for substance abuse treatment should be a standard practice.

Resources

For more information about free HCV testing sites or free hepatitis A/B vaccine sites in Maine, check out www.mainepublichealth.org. Click on "hepatitis" or call 1-800-821-5821 and ask to speak with the Hepatitis Coordinator, Mary Kate Appicelli.

Also see:

- The Maine Bureau of Health, Division of Health Engineering has a list of licensed tattoo parlors on their website: http://www.maine.gov/dhs/eng/el/index.html
- The Centers for Disease Control and Prevention periodically posts updated viral hepatitis educational materials on their website. You can order their hepatitis A, B, and C brochures online for free: see http://www.cdc.gov/ncidod/diseases /hepatitis/resource/brochures.htm
- The CDC also has resources on counseling at http://www.cdc.gov/ncidod/diseases/hepatitis/ resource/training/counseling.htm
- The Harm Reduction Coalition offers targeted information for injection drug users as well. See www.harmreduction.org for more info.

Contributed by: Mary Kate Appicelli

Promoting Creutzfeldt-Jakob Disease Surveillance in Maine

The Maine Bureau of Health is working with the National Prion Disease Pathology Surveillance Center (NPDPSC) to strengthen surveillance for prion diseases or transmissible spongiform encephalopathies, i.e. Creutzfeldt-Jakob Disease (CJD) and variant Creutzfeldt-Jakob (vCJD). The need of strengthening prion disease surveillance in the USA has been highlighted by the discovery of a case of bovine spongiform encephalopathy (BSE) first in Canada and now in the USA. In Maine, we are aware of six specimens submitted to the NPDPSC over the past few years, none of which have shown evidence of vCJD.

In collaboration with the NPDPSC, the Maine Bureau of Health plans to implement an effective process for reporting suspected cases of CJD and other prion diseases. It is critically important that cases of suspected prion disease are accurately diagnosed through examination of tissue obtained at autopsy, as tissue examination is the only definitive way to identify vCJD and the various forms of prion disease.

NPDPSC was established in 1997 by the Centers for Disease Control and Prevention (CDC) in collaboration with the American Association of Neuropathologists and has been recently recognized by Congress as the organization responsible for human prion surveillance in the USA. The NPDPSC performs hitopathology, immunohistochemistry, Western blot and prion gene analysis in autopsy and biopsy tissues to establish not only the diagnosis but also the type of prion disease. Cerebrospinal fluid (CSF) is also examined for the presence of the CJD protein marker 14-3-3. **All tests are free of charge** and the results reported to the health care provider . Data from individual cases are available upon request. Remaining brain tissues are stored and made available to other laboratories for research.

The NPDPSC currently tests approximately 50% of cases with prion disease assuming the commonly accepted incidence of about 1 case per million of the general population per year.

To increase detection of suspected prion diseases in Maine, we would ask providers to:

1. Report all suspected cases of prion disease to the Maine Bureau of Health (1-800-821-5821) and to NPDPSC (216-368-0587) as soon as the diagnosis is suspected. Epidemiologists from the Maine Bureau of Health or the NPDPSC may contact the healthcare provider to monitor the course of the disease.
2. Discuss the issue of autopsy with the patient's family when appropriate. In the NPDPSC's experience, the great majority of the families give consent for autopsy. NPDPSC can help make arrangements for the autopsy by identifying institutions willing to perform the procedure, and, when necessary, by covering the expenses.

of Health or NPDPSC upon request regardless of whether the autopsy was performed. Although it is essential that tissue be examined in as many cases as possible, if an autopsy cannot be performed, the case will be classified as possible or probable prion disease based on clinical data. The Surveillance Center is fully compliant with HIPAA regulations (http://www.hhs.gov/ocr/privacysummary.pdf).

4. Clearly indicate the diagnosis of CJD on the patient's death certificate when the clinical diagnosis applies because CJD is also monitored from mortality data.
5. Advise patient's families about supporting organizations. The CJD Foundation operates a national toll-free line to assist families and professionals (800-659-1991). Information about the NPDPSC, specimen collection and shipping instructions can be obtained by visiting its website at www.cjdsurveillance.com or calling 216-368-0587.

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Contributed by: Kathleen Gensheimer

Revised Recommendations for Malaria Prophylaxis in Dominican Republic

(Note: These recommendations were issued by the Centers for Disease Control and Prevention on November 30th in the form of a Health Advisory and are directed to professionals who provide health care for persons traveling to the Dominican Republic)

CDC has received reports of 2 cases of malaria in November 2004 in U.S. travelers to the Dominican Republic whose visits were limited to Punta Cana (La Altagracia Province) and San Francisco de Macoris (Duarte Province). During the same period at least 2 more cases have been reported in European travelers who visited Punta Cana. CDC has recommended malaria prophylaxis for travelers to rural areas in the Dominican Republic but not for travel to resorts. In light of these reports, as a precautionary measure, CDC is expanding the recommendations to include chloroquine prophylaxis for travelers to all areas in La Altagracia Province.

The Ministry of Health in the Dominican Republic has implemented malaria control measures, including intensified surveillance, prompt case management, and intensive mosquito control activities. CDC will continue to monitor the situation and provide updates on these recommendations.

Health care providers needing assistance with diagnosis or management of suspected cases of malaria should call the CDC Malaria Hotline: 770-488-7788 (M-F, 8am-4:30 pm, eastern time). For emergency consultation after hours, call: 770-488-7100 and request to speak with a CDC Malaria Branch clinician.

Additional information about malaria and its prevention is available at http://www.cdc.gov/malaria/ and http://www.cdc.gov/travel.

Contributed by: Geoff Beckett

Please call the Bureau of Health to report all reportable diseases:

Telephone Disease Reporting Line (24 hours / 7 days): 1-800-821-5821

Consultation and Inquiries (24 hours / 7 days):
1-800-821-5821

Facsimile Disease Reporting Line (24 hours / 7 days): 1-800-293-7534

Division of Disease Control Website:
www.maine.gov/dhs/boh/ddc/indexnew.htm

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